

NOTES ON THE NORTH AMERICAN SPECIES OF
LIMONIUM.

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SEVERAL years ago I published¹ in RHODORA a revision of the sea lavenders (*Limonium*) of North America and Mexico. Two principal groups were recognized, one, characterized by a glabrous calyx, containing three species, two of the eastern coast and one of the western; the other, marked by a pubescent calyx, containing six species, of which five were eastern and one western. At the time this revision was published only one specimen from the region between New Jersey and North Carolina had been available for examination. This was a plant collected by Clayton in Virginia, which was not clearly referable to any of the nine species described. Recent examination of the material of the genus in the United States National Herbarium, including a number of specimens from the area just mentioned, has brought out several extensions of range and led to the reduction to varietal rank of two species recognized in my previous paper.

Limonium angustatum, hitherto known only from Florida and Texas, proves to occur in Delaware, New Jersey, and even in New York, as well as in Louisiana and Alabama. The specimen of *Berlandier* 3179 (in part) from Tamaulipas in the Gray Herbarium, referred to *L. carolinianum* in my original paper, has been sent for reexamination by Dr. B. L. Robinson. I now consider it referable rather to *L. angustatum*. In the light of the new material examined, *L. angustatum* seems to be no more than varietally separable from *L. carolinianum*.

Limonium nashii, listed only from South Carolina to Texas and Tamaulipas, is now represented by two collections from New Jersey and one from Long Island. *L. trichogonum*, listed from Newfoundland and Labrador to New Jersey, extends southward to Maryland and Virginia. Intermediate specimens from New Jersey, Maryland, and North Carolina, as well as a Louisiana specimen closely similar to *L. trichogonum*, show that this plant is better treated as a geographic variety of *L. nashii*, of definite character in New England and northward but intergrading with *L. nashii* where their ranges adjoin.

¹ RHODORA 18: 53-66. pl. 118-119. 1916.

Limonium californicum, recorded only on the California coast from Humboldt County to Los Angeles County, occurs also near San Diego, where its range meets that of *L. mexicanum*, although no sign of intergradation has been seen. Specimens referable to this species have also been examined from Nevada. The following more detailed notes on some of the species are presented.

LIMONIUM CAROLINIANUM (Walt.) Britton, as to syn. only; Blake, RHODORA 18: 57. pl. 118, f. A. 1916.

Recorded in my paper from North Carolina to Florida, and from Tamaulipas. The Tamaulipas specimen (*Berlandier* 3179 in part), on reexamination, proves to be referable rather to var. *angustatum*. Additional specimens have been examined in the National Herbarium, as follows:

NORTH CAROLINA: Ocracoke Island, Hyde County, 1898, *Kearney* 2280. SOUTH CAROLINA: Santee Club, 1909, *McAtee* 1295. FLORIDA: Near Jacksonville, 1893, *Curtiss* 4361; 1894, *Curtiss* II. 5275; 1895, *Curtiss* II. 5581. Fort Myers, Lee County, 1916, *Standley* 12612. St. Vincent Island, 1910, *McAtee* 1848B.

The leaves of the three *Curtiss* specimens cited are narrow, only 1 to 1.6 cm. wide, resembling the leaves of the original material of *Statice brasiliensis* var. *angustata* Gray, but their calyces are typical of *L. carolinianum*.

***Limonium carolinianum* var. *angustatum* (Gray) Blake.**

Statice brasiliensis var. *angustata* Gray, Syn. Fl. N. Amer. 2¹: 54. 1878.

Limonium angustatum Small, Bull. Torrey Club 24: 488. 1897; Blake, RHODORA 18: 58. pl. 118, f. B. 1916.

Limonium carolinianum Mohr, Contr. U. S. Nat. Herb. 6: 663. 1901. Not *Statice caroliniana* Walt.

Statice angustata Wangerin, Zeitschr. Naturw. Halle 82: 439. 1911.

The supposed difference in character of bractlets between *L. angustatum* and *L. carolinianum* breaks down completely in the series examined, leaving nothing to separate the two plants but the difference in the calyx lobes. As specimens occur intermediate in calyx characters, it seems necessary to subordinate *L. angustatum* to *L. carolinianum* as a variety. The extension of range for this plant to

New York, New Jersey, and Delaware is noteworthy. Of the following cited specimens, all except three are in the National Herbarium.

NEW YORK: New Dorp, Staten Island, 5 Sept. 1895, *Pollard*.
NEW JERSEY: Weehawken, 14 Sept. 1895, *Van Sickle*. Port Norris, 1890, *J. H. Holmes*. Cape May, 28 Aug. 1917, *A. Gershoy* 561 (Gray Herb.).
DELAWARE: Cedar Creek, 10 Sept. 1875, *Commons* (Gray Herb.).
FLORIDA: Manatee, *Simpson*. Without definite locality, *Chapman Herbarium* (intermediate between *carolinianum* and *angustatum*). St. Vincent Island, 1910, *McAtee* 1833 (intermediate).
ALABAMA: Mobile County, 1870, *Mohr*. LOUISIANA: Vicinity of Cameron, 1910, *McAtee* 1921. TEXAS: Galveston, 18 Sept. 1877, *Ward* (mixed with *L. nashii*). Galveston Island, 1901, *Tracy* 7474.
TAMAULIPAS: Field near Santa Teresa, Oct. 1830, *Berlandier* 3179 in part (Gray Herb.; referred in my former paper to *L. carolinianum*).

Tracy 7474, as represented in the Gray Herbarium, was *L. nashii* Small, but the specimen in the National Herbarium is definitely *L. carolinianum* var. *angustatum*. Both plants were previously known from this locality.

LIMONIUM MEXICANUM Blake, RHODORA 18: 59. pl. 118, f. C. 1916

Additional specimens examined in the National Herbarium:

CALIFORNIA: Bay of San Francisco, *Wilkes Expedition*. San Diego, 1875, *Palmer*, 154; same locality, 1889, *Vasey*. Chula Vista, near San Diego, 1915, *Collins & Kempton* 333.

The Wilkes Expedition specimens unquestionably belong to *L. mexicanum*, having a perfectly glabrous calyx, and represent a noteworthy extension of range.

LIMONIUM NASHII Small; Blake, RHODORA 18: 61. pl. 118, f. D. 1916.

Statice tracyi Gand. Bull. Soc. Bot. France 66: 221. 1919.

Gandoger's *Statice tracyi* is based primarily on *Tracy* 6475, from St. Vincent, Florida; a specimen from Texas (*Leybold*) is also cited. In my revision (p. 61) I called attention to *Tracy* 6475 as a very puzzling plant. In the light of the variation exhibited by the more abundant material now available, the differences there commented on are seen to be of little importance, and I have no hesitation in reducing *Statice tracyi* to synonymy. The following additional specimens referable to *L. nashii* are in the National Herbarium:

NEW YORK: Cedar Point, Long Island, 8 Sept. 1879, *J. Schrenk*.

NEW JERSEY: Pleasantville, 1 Oct. 1916, *Tidestrom* 8015. Cold

Spring, Cape May County, 4 Aug. 1909, *Pennell* 2180. GEORGIA: Tybee Island, Chatham County, 29 Sept. 1900, *Harper* 748. FLORIDA: St. Augustine, Sept. 1848, *Rugel* 307. TEXAS: Galveston, Sept. 1839, —; same locality, 18 Sept. 1877, *Ward*. Vicinity of Corpus Christi, Oct. 1913, *Rose* 18085. Without definite locality, *Mexican Boundary Survey under Emory* 708.

***Limonium nashii* var. *trichogonum* Blake.**

Limonium trichogonum Blake, RHODORA 18: 61. pl. 119, f. E. 1916.

At the time this plant was described as a new species, I had seen no material of the group of species with hairy calyx from the area between New Jersey (the southernmost locality for *L. trichogonum*) and South Carolina (the northernmost locality for *L. nashii*). The dozen or more specimens now available from New York to Virginia and the Carolinas show that the two plants, although distinct enough in their proper areas, intergrade in the intermediate region, and that *L. trichogonum* is better treated as a northern variety of *L. nashii*. The following specimens in the National Herbarium are *intermediate* between the two forms:

NEW JERSEY: Weehawken, 30 Aug. 1894, *Van Sickle*. MARYLAND: Shore of Potomac River, Rock Point, Charles County, 2 Oct. 1921, *Blake* 8432. NORTH CAROLINA: Without definite locality, 1888, *G. McCarthy* (nearer *trichogonum*). LOUISIANA: Isle à Pied, 13 Aug. 1900, *Tracy & Lloyd* 264 (nearer *trichogonum*).

All the New England material examined is typical of *L. nashii* var. *trichogonum*. The following additional specimens, referable to var. *trichogonum*, are at hand in the National Herbarium:

NEW JERSEY: Atlantic City, 1867, *I. S. Moyer*. MARYLAND: St. Mary's City, 22 Aug. 1905, *C. D. Mell*. VIRGINIA: Fortress Monroe, 1879, *Vasey*. Smith's Island, 1 Oct. 1897, *Wm. Palmer*.

The specimen collected by Clayton (no. 573) in Virginia, and now in the British Museum, which was referred to in my previous paper (p. 63) as having the calyx teeth of *L. trichogonum* but the glabrous tube of *L. carolinianum*, probably belongs to *L. carolinianum* var. *angustatum*.

LIMONIUM CALIFORNICUM (Boiss.) Heller; Blake, RHODORA 18: 64. pl. 119, f. G. 1916.

This species, previously known on the California coast from Humboldt County to Los Angeles County, extends southward to the

vicinity of San Diego; and Nevada specimens, although differing in slight details, must be referred here. Two or three of the calyx ribs are sometimes glabrous or nearly so in this species. The following additional material has been examined in the National Herbarium:

CALIFORNIA: Near San Francisco, 1863, *Bolander* 2428. Alviso, Santa Clara County, Sept. 1902, *Elmer* 4218. Ocean Beach, near San Diego, 17 Aug. 1894, *Mearns* 4036 (in Nat. Herb.; but the specimen of this number in Gray Herb. is *L. mexicanum*). Without definite locality, *C. Wright*. NEVADA: Ten miles from Stone's Ferry, altitude 425 meters, 11 April 1894, *Jones* 5032m. Muddy Creek, altitude 610-915 meters, 1898, *Purpus* 6157.

LIMONIUM LIMBATUS Small; Blake, RHODORA 18: 64. pl. 119, f. H. 1916.

The following additional specimens of this very distinct species have been examined in the National Herbarium.

TEXAS: Near Pecos City, 14 Oct. 1913, *Rose & Fitch* 17912. Stockton, June 1881, *Havard*. NEW MEXICO: Roswell, June 1899, *J. D. Tinsley* 14. Tularosa, 4 Dec. 1902, *J. H. Gaut*. Nine miles south of Tularosa, *C. H. T. Townsend* 6. Malone's Ranch, 16 July 1895, *Wooton*. Morgan's Ranch, altitude 1125 meters, 16 July 1895, *Wooton*. Malone's Crossing, 22 Aug. 1899, *Wooton*.

The key given in my original paper (p. 57) may now be revised, as follows:

KEY TO NORTH AMERICAN SPECIES OF LIMONIUM.

Calyx glabrous (rarely with one or two hairs in nos. 1a and 2).

Branchlets loosely flowered; Atlantic Coast species.

Calyx lobes deltoid or oval, obtuse or rounded to acute, usually 0.5-0.7 mm. long; North Carolina to Florida.

1. *L. carolinianum* (Walt.) Britton.

Calyx lobes triangular-ovate, acute or subacuminate, 0.7-1 mm. long; New York to Texas and Tamaulipas.

1a. *L. carolinianum angustatum* (Gray) Blake.

Branchlets densely flowered; California and Lower California.....

2. *L. mexicanum* Blake.

Calyx densely pubescent at least at base.

Calyx limb erect.

Calyx (5.3) 6-7.5 mm. long, its lobes 1-1.7 mm. long.

Scape strongly branched from near the base; innermost bractlet 5-6 mm. long; Tamaulipas

3. *L. endlichianum* (Wangerin) Blake.

Scape branched from near the middle; innermost bractlet 3.8-5.5 mm. long.

Calyx pubescent only at base or on one or two of the ribs to the middle; New York to Texas and

Tamaulipas.....4. *L. nashii* Small.

- Calyx densely pubescent to middle or above on all the ribs; Newfoundland and Labrador to Virginia.....4a. *L. nashii trichogonum* Blake.
 Calyx 4.3–5.5 mm. long, its lobes 0.4–0.8 mm. long.
 Calyx lobes obtuse to subacute; hairs of calyx ca. 0.5–0.6 mm. long; branchlets loosely flowered; Florida.
 5. *L. obtusilobum* Blake.
 Calyx lobes acute or acutish; hairs of calyx ca. 0.2–0.3 mm. long; branchlets densely flowered; California, Nevada.....6. *L. californicum* (Boiss.) Heller.
 Calyx limb spreading at maturity; Texas, New Mexico.
 7. *L. limbatum* Small.

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REPORTS ON THE FLORA OF THE BOSTON DISTRICT,—XL.

SOLANACEAE.

DATURA.

D. INERMIS Jacq. Malden, introduced (*F. S. Collins*, Aug. 10, 1881); rubbish heap, Cambridge (*W. Deane*, Sept. 23, Oct. 2, 1884). Adventive from Africa.

D. METEL L. In shingle at Phillips Beach, Swampscott (*C. W. Swan*, 1888). Specimen in herb. N. E. Botanical Club.

D. METELOIDES DC. Rubbish heap, Cambridge (*W. Deane*, Sept. 17–18, Oct. 14, 1885). Specimen in herb. W. Deane.

D. STRAMONIUM L. Waste places; occasional, especially in Boston and along the coast.

D. TATULA L. Waste places, same range as *D. Stramonium*.

HYOSCYAMUS.

H. NIGER L. A rare weed at Ipswich, Westford, Somerville, Cambridge and Boston; other reports without specimens cited in *J. Robinson*, Fl. Essex Co. 86, 1880.

LYCIUM.

L. CHINENSE Mill. Boston (*S. S. Clark*, Nov. 10, 1915). Specimen in herb. Gray. Native of China.

L. HALIMIFOLIUM Mill. Persistent and escaping in many places.

LYCOPERSICUM.

L. ESCULENTUM Mill. Old gardens and waste places, seldom appearing for more than one year and hardly a part of the flora.